REMARKS

A Final Rejection was mailed in the present case was mailed on February 7, 2007, making a response due on or before May 7, 2007. This response is being submitted, along with a Petition For Extension of Time Within the Third Month, and the required extension fee and accompanies a Request For Continued Examination (RCE). No further fee is thought to be due at this time. If any additional fee is due for the continued prosecution of this application, please charge the same to Applicant's Deposit Account No. 50-2555 (Whitaker, Chalk, Swindle & Sawyer, LLP).

Claims 1-3 were pending in the application. The Examiner has repeated the previous rejection of the pending claims over the Corbett, Jr. '309, Corbett, Jr. '886, Doolittle '660 and Ohasi '297 references, previously cited, under 35 U.S.C. Section103(a). To very briefly summarize the argument, the Examiner argues that:

(a) the Corbett, Jr.'309 reference shows the basic steps in installing a gasket in a socket end of a thermoplastic pipe which is used to form a pipe coupling with the gasket being coated with a Teflon™ coating;

(b) the Doolittle '660 reference is cited for the position that both Teflon and polyurethane coatings are used as anti-friction coatings;

(c) the Ohasi '297 reference is then cited for the position that it is well known that nitrile rubber (NBR) and polyurethane are equivalent materials in providing similar oil resistance. The Examiner argues that it would have therefore been "obvious" to provide the polyurethane coating of Doolittle as an equivalent to the Teflon coating taught in the Corbett, Jr. existing patents.

Applicant has amended remaining independent Claim 1 to more specifically describe the method steps of the invention. The method of the invention as specifically described in the amended claim language includes the steps of:

> installing a gasket at a first circumferential position on the outer working surface, the gasket being formed of styrene butadiene rubber and having the entire outer working surface thereof coated with an external synthetic polymeric coating, the synthetic polymeric coating comprising a high performance polyurethane anti-corrosion and anti-friction coating, the coating being applied to the exterior of the gasket and then

dried to form a permanent, external coating for the gasket which is able to withstand temperature, chemical attack and abrasion.

The steps, as recited in amended Claim 1 above, produce a gasket which is "effective to provide oil resistance which is at least that of nitrile rubber at a fraction of the cost of a nitrile rubber gasket, thereby allowing a less expensive material to be used in a product with characteristics equivalent to a more expensive material."

Applicant has previously advanced the argument that only a particular class of coating is being claimed in the amended claims and that this particular class of coating works for the specifically intended end application of a pipe belling process described in Applicant's Specification. This coating is described with greater particularity in the remaining Independent Claim1 and tracks the language of the Specification as originally filed as follows:

"a synthetic polymeric coating"; Specification page 7, lines 12-13
"a permanent, external coating for a sealing gasket"; Specification page 3, lines 22-23;
"a polyurethane, high performance coating"; Specification page 4, line 23;
"being conveniently applied by spraying on at least selected external surfaces of the gasket followed by a drying period as recommended by the manufacturer."Specification, page 4, lines 25-27.

The commercially preferred class of coating material is described at length in Applicant's original Specification and the product characteristics are given in remaining dependent Claim 2. There may be many types of coatings which can be utilized to improve the weathering, ozone resistance, and oil resistance properties of rubber compounds. However, many of these coatings may be sticky, or break down under heat and pressures of the type which would be encountered in a pipe belling operation. The might also increase the frictional forces involved in forcing the heated plastic pipe end over the belling mandrel and associated gasket in the pipe belling operation at the pipe manufacturing plant.

In addition to the acceptable frictional characteristics of the subject coating, Applicant has also found a coating material which provides acceptable resistance to the problem of environmental degradation of the sealing gaskets used in plastic pipe systems, such as water and sewer pipes used in the municipal water works industries. The gaskets which are used as the sealing elements in such systems are subjected to attack by any of a number of environmental contaminants. These include, oil and hydrocarbons, sunlight, ozone, chemicals, etc. In order to ensure the sealing integrity of such

systems, it is necessary to certify that the gaskets in question meet, for example, oil resistance standards as set out in ASTM C361, which Applicant's gaskets have been shown to meet (see the test analysis submitted with Applicant's Response filed on May 22, 2006).

The combination of the above two characteristics in a coating composition for a sealing gasket, and specifically to a sealing gasket used in a "Rieber" type pipe belling operation, results in an economic advantage in the overall manufacturing operation. In the prior art, the ASTM standard has generally been met by providing a sealing gasket formed of a material which is itself resistant to oil and other environmental contaminants. This provides a satisfactory solution to the problem, but has the disadvantage that the more exotic rubber formulations, such as nitrile rubber, are more expensive. Applicant can provide a gasket, the body of which is formed of a less expensive rubber material, with the coating being used to provide the oil resistance, ozone resistance, etc. needed in a municipal waterworks type application.

The presently defined invention would not be obvious from the combination of art cited by the Examiner for several reasons. The issued Corbett, Jr. patents only teach the pipe belling process and the use of a Teflon™ coating. They nowhere mention or suggest the use of a polyurethane coating, and specifically the "high performance polyurethane coating" claimed in independent Claim 1 and described in Applicant's original specification.

Doolittle teaches at Col. 4, lines 5-10 that:

> *Cross runway line or pendant 36 is connected at both sides of runway 12 to energy absorbers 38, which are for example of the type described in U.S. Pat. No. 3,172,625 having payout elements 40 of nylon tape. Pendant 36 is supported a slight distance about the surface of runway 12, for example, by annular discs 39, described in U.S. Pat. No. 3,010,683 to facilitate engagement of cross runway pendant 36 by an arresting hook 74C of an aircraft 14C so equipped (as shown in FIG. 15) when barrier net 10 is lowered out of the way. Pendant 36 is, for example, made of steel cable ½ to 11/4 inches in diameter or of an energy absorbing material, such as nylon or annealed stainless steel. Line 36 may also be made of braided nylon rope, twisted rope or webbing, and quite effectively of double braided nylon rope as described in U.S. Pat. No. 3,456,908. Steel pendant 36 may be advantageously coated with an antifriction material such as a slippery polymer like polyurethane, nylon or a chlorinated tetrafluoroethylene polymer, particularly Teflon made by E. I. duPont*

de Nemours & Co. of Wilmington, Delaware.

Note that Doolittle is coating a "pendant 36" which is a "steel cable ½ to 11/4 inches in diameter." He nowhere suggests coating a sealing gasket used in a Rieber type pipe belling operation with an external coating. He does not even teach coating a rubber item of any type with an external polyurethane coating. He nowhere suggests that a polyurethane coating would possess any advantages over a different coating, such as a "nylon or a chlorinated tetrafluroethylene polymer..." Doolittle nowhere suggests that a polyurethane coating would provide superior results when used in a pipe belling operation of the type described in Applicant's Specification. Finally, Doolittle nowhere describes the "high performance polyurethane coating" which is claimed by Applicant and described in terms of a commercially available product in Applicant's Specification.

The Examiner then argues that it would be obvious to make such a substitution because the Ohasi ('297) reference teaches that nitrile rubber and polyurethane are equivalent materials in terms of oil resistance. However, the Ohasi reference is not even dealing with a coating process. Rather, Ohasi states at Col. 4, lines 13 et seq. that:

> *Forming material of the seal member 50 is not particularly limited as long as the seal member body 54 is closely contacted with the outer circumferential surface of the nozzle 21 and suitable seal property can be obtained between the seal member body 54' and the nozzle 21, and the material has oil resistance, heat-resisting property, low temperature resistance, weather resistance or the like. In addition to the above-mentioned NBR, synthetic rubber such as fluororubber or fluorosilicone rubber, or elastic high-molecular material such as thermoplastic elastomer in polyester series, polyvinylchloride series, polyurethane series or the like may be used. At least the seal member body 54 may be formed by the elastic high-molecular material.*

Ohasi teaches that the "seal member body 54" may be formed of, for example a polyurethane series high molecular weight material. This is significant for two reasons in as far as Applicant's amendments to remaining independent Claim 1. First of all, if Applicant formed the entire gasket body out of a "high molecular weight polyurethane material" the economic advantages of the invention would not be met. Secondly, the "polyurethane series high molecular weight material" is not a "coating" and a person reading the Ohasi specification would not be led to a particular class

of polyurethane "high performance coatings" as called for in Applicant's amended Claim 1 and described in Applicant's original Specification. To further emphasize this point, Applicant's amended Claim 1 now further describes the gaskets in question as being "coated with an external synthetic polymeric coating, the synthetic polymeric coating comprising a high performance polyurethane anti-corrosion and anti-friction coating, **the coating being applied to the exterior of the gasket and then dried to form a permanent, external coating for the gasket** (Applicant's emphasis) which is able to withstand temperature, chemical attack and abrasion."

In other words, the "high performance coatings" of the invention are generally in the nature of an uncured elastomer coating which is applied to a cured elastomer substrate. In order to improve the adhesion of the coating, the gasket is then "dried." This can be accomplished, for example, by heat drying, infrared curing, over curing, etc. There may be a "tie coat" according to the manufacturers recommendation, where an initial coating of one material is placed on the substrate and the final coating of a different material is applied on top.

Finally, Applicant wishes to again emphasize the specific nature of the "Rieber" pipe belling manufacturing operation. This type of belling operation involves a great deal of heat and pressure to force the heated PVC pipe end over the belling mandrel and over the gasket which is pre-located on a special forming mandrel. It is often necessary to prelubricate the gasket and mandrel to assure that the gasket can be properly "belled over" during the manufacturing process. The wrong type coating on the gasket would likely result in undue belling forces being exerted which would stress or rupture the pipe end. Similarly, even if the belling operation were accomplished successfully, the belled pipe end might fail in field assembly if the gasket which was installed caused undue friction, and thus undue insertion force in making up the ultimate pipe joint.

Even if the combination of art relied upon by the Examiner is taken for the position that polyurethane and nitrile rubber are equivalent materials in terms of oil resistance properties, this general teaching would not arrive at Applicant's more specific claim language regarding a specific class of "high performance polyurethane" coatings described in Applicant's original Specification. The '309 Corbett reference is the only reference which teaches a "coating" for a gasket. However, the coating is from an entirely different class of materials. The Doolittle reference is "coating" items, but the items are steel cables. The Ohasi reference is not "coating" an item at all, but forms an entire seal body of a selected high molecular weight polymeric material.

Based upon the above arguments and amendments, remaining Claims 1-3 are thought to be allowable over the art of record, and an early notification of the same would be appreciated.

Respectfully submitted,

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Charles D. Gunter, Jr.
Reg. No. 29,386
Whitaker, Chalk, Swindle & Sawyer, LLP
301 Commerce St., Suite 3500
Fort Worth, Texas 76102
(817) 878-0504

ATTORNEY(S) FOR APPLICANT

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